CLAIMS

1. (currently amended) A multi-position electrical connector for a robotic tool changer, comprising:

a bracket mountable to a robotic tool changer master or tool module;

a coupling interface connected to said bracket, in a fixed position with respect to said bracket, said coupling interface comprising a plurality of electrical contacts; and

a cable interface connected to said bracket, moveable to a plurality of discrete positions with respect to said bracket, said cable interface comprising a plurality of electrical contacts.

2. (original) The connector of claim 1 wherein at least one said coupling interface electrical contact is electrically connected to a cable interface electrical contact.

3. (original) The connector of claim 1 wherein said cable interface is disposed at substantially 90 degrees to said coupling interface.

4. (original) The connector of claim 3 wherein said cable interface is rotatable about an axis of said coupling interface.

5. (currently amended) The connector of claim 4 wherein the plurality of discrete positions that said cable interface may assume, ~~are~~ is disposed within a range of 180 degrees of rotation about said coupling interface axis.

6. (original) The connector of claim 1 wherein said plurality of positions are predetermined.

7. (original) The connector of claim 6 wherein said cable interface is fixed in one of said plurality of positions by the mating a retention member on one of said cable interface and said bracket, with a recess on the other of said cable interface and said bracket.

8. (original) The connector of claim 7 wherein said retention member is a set screw inserted in a threaded through-hole in said bracket.

9. (currently amended) A robotic tool changer, comprising:

a master module having a master electrical connector affixed thereto via a first bracket; and

a tool module having a tool electrical connector affixed thereto via a second bracket, said tool module adapted to be selectively coupled and decoupled to said master module;

wherein when said master and tool modules are coupled, said master and tool electrical connectors mate in an electrically conductive manner; and

wherein one of said master and tool electrical connectors includes a cable connector moveable to a plurality of discrete positions.

10. (original) The tool changer of claim 9 wherein said master and tool connectors comprise a plurality of electrical contacts, and wherein when said master and tool modules are coupled, a plurality of signals are connected between said master and tool connectors in an electrically conductive manner.

11. (original) The tool changer of claim 9 wherein said cable connector is disposed at substantially 90 degrees to the axis of said master and tool electrical connectors when said connectors are mated.

12. (original) The tool changer of claim 11 wherein said cable connector is rotatable about said axis.

13. (currently amended) The tool changer of claim 12 wherein said cable connector is held in one of said plurality of discrete positions about said axis by a retention member.

14. (original) The tool changer of claim 13 wherein said retention member is a set screw.

15. (currently amended) A method of configuring a robotic tool for use on a robotic arm having a master module of a robotic tool changer including a master electrical connector attached thereto via a first bracket, comprising:

affixing a tool module ~~of a~~ to said robotic tool, said tool module including a tool electrical connector affixed thereto via a second bracket, and having a cable connector moveable to a plurality of discrete positions;

fixing said cable connector in one of said discrete positions; and

attaching an electrical cable to said cable connector.

16. (currently amended) The method of claim 15 wherein fixing said cable connector in one of said discrete positions comprises moving said cable connector to one of a plurality of predetermined positions and securing said cable connector in the selected position.

17. (currently amended) The method of claim 16 wherein securing said cable connector in the selected position comprises engaging a retaining member in [[a]] said second bracket ~~of said tool electrical connector~~ in a recess of said cable connector.

18. (currently amended) The method of claim 17 wherein said retaining member is a set screw inserted in a threaded through-hole of said second bracket.

19. (currently amended) The method of claim 18 wherein said plurality of predetermined positions comprise a plurality of threaded through-holes positioned so as to engage a set screw with said recess as said cable connector is moved with respect to said second bracket.

20. (currently amended) An electrical connector, comprising:

a bracket;

a first multi-contact connector comprising a generally cylindrical pin block disposed in and secured to said bracket;

a second multi-contact connector electrically connected to said first connector and rotatably disposed in said bracket such that said second connector is rotatable around said first connector; and

a retaining member disposed in said bracket operative to engage with [[a]] one of a plurality of recesses in said second connector so as to fix said second connector in one of a plurality of predetermined positions around said first connector.

21. (currently amended) The connector of claim 20 wherein said plurality of predetermined positions is determined by [[a]] said plurality of ~~said~~ recesses in said second connector, each of which aligns with said retaining member as said second connector rotates around said first connector.

22. (original) The connector of claim 20 wherein said retaining member is a set screw disposed in a threaded through-hole in said bracket.

23. (original) The connector of claim 22 wherein said plurality of predetermined positions is determined by a plurality of threaded through-holes in said bracket, one of which contains a set screw and aligns with said recess in said second connector as said second connector rotates around said first connector.